

Title Vitamin C changes and total antioxidant activity of fresh and stored green asparagus spears
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Abstract

Vitamin C – one of many antioxidants, probably the compound most commonly recognised as beneficial to human health, and the antioxidant activity, contribute greatly to health promoting properties of food. The objective of the study, carried out in 2003-2004 was to assess the changes of total antioxidant capacity (TAC) and of vitamin C content during storage of green spears of asparagus cv. 'Backlim', 'Gijnlim', 'Horlim' and 'Thielim'. Measurements were performed on the day of harvest and after storage in PE bags, at 1°C, for one, two and three weeks. Only two upper sections (each 6 cm long) of the 18 cm long spear were analysed. Vitamin C was determined by polarographic and refractometric methods, and TAC by the DPPH free radical method. The vitamin C content in the upper 6 cm long section averaged 79-94 mg/100g fresh weight and was by 50% higher than in the lower section (6-12 cm) of the spear. The vitamin C content in the upper section decreased most rapidly (by 40%), in the first week of storing, in the next two weeks the loss was smaller. The TAC of the 6 cm long upper section of the spear was about twice as high as compared to that of the lower (6-12) section. In the stored spears the TAC fell only by 15% after one week, and by less than 10% after the second week.